The based ring of two-sided cells of an affine Weyl group

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Abstract: Based ring of two-sided cells of certain Coxeter groups is introduced by Lusztig. The based rings are interesting and have nice relations with the corresponding Hecke algebras. In this talk I will mainly talk about a conjecture of Lusztig concerning with the structure of the based rings. We also explain its possible application to understanding the leading coefficient of certain Kazhdan-Lusztig polynomials.